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Indian Standard

FISH PROCESSING INDUSTRY — WATER AND ICE — TECHNICAL REQUIREMENTS

ICS 67.120.30

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

June 1998

Price Group 1

Fish and Fisheries Products Sectional Committee, FAD 12

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Fish and Fisheries Products Sectional Committee had been approved by the Food and Agriculture Division Council.

Considerable quantity of water and ice is utilized in the processing of fish and fisheries products. Ice is mainly used to bring down temperature of fish to 0°C. Ice is also used for cooling water for processing. It is a statutory requirement that the water and ice used in the industry is to be tested and certified as fit for fish processing. A need was, therefore, felt to prepare this standard indicating various technical requirements.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

FISH PROCESSING INDUSTRY — WATER AND ICE — TECHNICAL REQUIREMENTS

1 SCOPE

This standard prescribes the technical requirements for water and ice used in the fish processing industry.

2 REFERENCES

The Indian Standards listed in Annex A contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to aggreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated.

3 REQUIREMENTS

3.1 The water shall comply with the requirements given in Tables 1, 2 and 3 for its microbiological, physical and chemical and radioactive charateristics.

Table 1 Microbiological Requirement of Water

Sl No.	Characteristic	Requirement	Method of Test, Ref to IS No.
(1)	(2)	(3)	(4)
i)	Total bacterial count/ml, *Max*	100	5402
ii)	Coliforms count/100 ml	Absent	5401
iii)	*E.coli* count/100 ml	do	5887 (Part 1)
iv)	Coagulase-positive staphylococci/ml	do	5887 (Part 2)
v)	*Salmonella* and *Shigella*/l	do	5887 (Part 3)
vi)	Vibrio cholerae/l	do	5887 (Part 5)

3.2 Ice shall be clear, colourless and free from air bubbles and snowy butts. Water used in making ice shall comply with the requirements mentioned in **3.1**.

Table 2 Physical and Chemical Quality Requirement
(*Clause* 3.1)

Sl No.	Characteristic	Requirement	Method of Test, Ref to IS No.
(1)	(2)	(3)	(4)
i)	Colour, hazen units, *Max*	5	3025 (Part 4)
ii)	Turbidity, NTU, *Max*	5	3025 (Part 10)
iii)	Odour	Odourless	3025 (Part 5)
iv)	*p*H	6.5-8.5	3025 (Part 11)
v)	Total dissolved solids, mg/l, *Max*	1 500	3025 (Part 16)
vi)	Alkalinity (as $CaCO_3$), mg/l, *Max*	100	3025 (Part 23)
vii)	Chlorides as (NaCl), mg/l, *Max*	1 000	3025 (Part 32)
viii)	Sulphates (as SO_4), mg/l, *Max*	200	3025 (Part 24)
ix)	Total hardness as $CaCO_3$, mg/l, *Max*	600	3025 (Part 21)
x)	Iron (as Fe), mg/l, *Max*	0.3	32 of 3025
xi)	Copper (as Cu), mg/l, *Max*	0.1	3025(Part 42)
xii)	Lead (as Pb), mg/l, *Max*	0.1	37 of 3025
xiii)	Mercury (as Hg), mg/l, *Max*	0.001	3025 (Part 48)
xiv)	Cadmium (as Cd), mg/l, *Max*	0.01	3025 (Part 41)
xv)	Arsenic (as As), mg/l, *Max*	0.05	3025 (Part 37)
xvi)	Chromium (as Cr), mg/l, *Max*	0.05	38 of 3025
xvii)	Selenium (as Se), mg/l, *Max*	0.01	28 of 3025
xviii)	Free chlorine, mg/l, *Max*	10	3025 (Part 26)

Table 3 Radioactive Requirement
(*Clause* 3.1)

Sl No.	Characteristics	Requirement	Method of Test, Ref to Cl No. of IS 3025
(1)	(2)	(3)	(4)
i)	Alpha emitters, lic/ml, *Max*	10^{-9}	58
ii)	Beta emitterrs, lic/ml, *Max*	10^{-8}	58

4 SAMPLING

4.1 Representative samples of water shall be drawn as prescribed in IS 1622 and IS 3025 (Part 1).

4.2 Representative samples of ice shall be drawn from the processing units under aseptic conditions for bacteriological analysis and in the usual way for physical and chemical analysis. For carrying out the physical and chemical analysis, about 5 litres of water shall be available after melting.

ANNEX A

(*Clause* 2)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*
1622 : 1981	Methods of sampling and microbiological examination of water (*first revision*)
3025 : 1964	Methods of sampling and test (physical and chemical) for water used in industry
3025	Methods of sampling and test (physical and chemical) for water and waste water
(Part 1) : 1987	Sampling (*first revision*)
(Part 4) : 1983	Colour (*first revision*)
(Part 5) : 1983	Odour (*first revision*)
(Part 10) : 1984	Turbidity (*first revision*)
(Part 11) : 1983	*p*H value (*first revision*)
(Part 16) : 1984	Filterable residue (total dissolved solids) (*first revision*)
(Part 21) : 1983	Total hardness (*first revision*)
(Part 23) : 1986	Alkalinity (*first revision*)
(Part 24) : 1986	Sulphates (*first revision*)
(Part 26) : 1986	Chlorine residual (*first revision*)
(Part 32) : 1988	Choride (*first revision*)
(Part 37) : 1988	Arsenic (*first revision*)
(Part 41) : 1992	Cadmium (*first revision*)
(Part 42) : 1992	Copper (*first revision*)
(Part 48) : 1994	Mercury (*first revision*)
5401 : 1969	Method for detection and estimation of coliform bacteria in foodstuffs
5402 : 1969	Method for standard plate count of bacteria in foodstuffs
5887	Methods for detection of bacteria responsible, for food poisoning:
(Part 1) : 1976	Isolation, identification and enumeration of *Escherichia Coli* (*first revision*)
(Part 2) : 1976	Isolation, identification and enumeration of *Staphylococcus aureus* and *Faecal streptococci* (*first revision*)
(Part 3) : 1976	Isolation and identification of *Salmonella* and *Shigella* (*first revision*)
(Part 5) : 1976	Isolation, identification and enumeration of Vibrio cholerae and *Vibrio parahaemolyticus* (*first revision*)

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Amendments Issued Since Publication

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